

Albert H. Niden, M.D.
Department of Medicine
Director, Pulmonary Disease Section
Drew Postgraduate Medical School
1620 East 119th Street
Los Angeles, California 90059

Effects of Cigarette Smoke, Noxious Fumes and Drugs on the Terminal Airways.

The aims of this project are:

- (1) To elucidate the role of the large alveolar cell, nonciliated bronchiolar cell, and monocyte-macrophage system in pulmonary phospholipid metabolism. Phospholipid metabolism will be studied by utilizing autoradiographic techniques to localize and follow the subcellular formation of phospholipids from fatty acid precursors. The effect of various stimuli, e.g., cigarette smoke, noxious fumes, and drugs, on phospholipid metabolism by these cells will be observed.
- (2) To study pulmonary capillary permeability and the factors affecting it.

By using E.M. tracer protein molecules of known sizes (horseradish peroxidase at 40 Å, hemoglobin at 65 Å, Dextran at 40 Å to 200 Å), one is able to investigate the effects of intravascular pressure and damage to the capillary endothelium on pulmonary capillary permeability. The effects of air pollutants, drugs, and cigarette smoke on pulmonary capillary permeability will thus be studied.

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